

**IN THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A method for converting an alternating current (AC) input to a direct current (DC) output, the DC output providing power to a load, the method comprising:
  - receiving the alternative current (AC) input;
  - receiving a first feedback signal indicative of a target voltage required by the load;
  - receiving a second feedback signal indicative of the DC output;
  - providing a controller module included in an AC-DC adapter and operable to receive the first feedback signal and the second feedback signal;
  - providing a converter in the AC-DC adapter;
  - the controller module adjusting a control signal, responsive to receiving the first and second feedback signals, to the converter to maintain the DC output within a predefined range of the target voltage; and
  - during a charging phase, a difference between the DC output and the target voltage is always positive while providing a charge to the load, and the DC output is reduced to a predefined value upon completion of providing the charge to the load.
2. (Canceled)
3. (Previously Presented) The method of claim 1, wherein the second DC output provides power to the load, wherein the load is a battery.
4. (Original) The method of claim 3, wherein the DC output is suitable to charge the battery.
5. (Previously Presented) The method of claim 1, wherein upon a loss of the first feedback signal the DC output is maintained at the predefined voltage.

6. (Original) The method of claim 5, wherein the predefined voltage is equal to a previous voltage value of the DC output measured instantly prior to the loss of the first feedback signal.
7. (Canceled)
8. (Original) The method of claim 1, wherein the first feedback signal is received from the load.
9. (Original) The method of claim 1, wherein the first feedback signal is received from a controller operable to control the load.
10. (Original) The method of claim 1, wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal superimposed on another analog signal, or an SMBus signal.
11. (Canceled)
12. (Previously Presented) An integrated alternating current (AC) to direct current (DC) adapter comprising:
  - a rectifier module operable to receive an AC input and generate a first DC output;
  - a buck converter module operable to receive the first DC output and generate a second DC output responsive to a control signal;
  - an AC-DC adapter;
  - a controller module included in the AC-DC adapter and operable to receive a first feedback signal input indicative of a target voltage required by a load and a second feedback signal input indicative of the second DC output, the controller module adjusting the control signal, responsive to the first and second feedback signal inputs, to the buck converter module to maintain the second DC output to be within a predefined range of the target voltage; and
  - during a charging phase, a difference between the second DC output and the target voltage is always positive while providing a charge to the load, and the second DC output is reduced to a predefined value upon completion of providing the charge to the load.
13. (Canceled)

14. (Original) The adapter of claim 12, wherein the second DC output provides power to the load, wherein the load is a battery.
15. (Original) The adapter of claim 14, wherein the second DC output is suitable to charge the battery.
16. – 18. (Canceled)
19. (Original) The adapter of claim 12, wherein the first feedback signal is received from the load.
20. (Original) The adapter of claim 12, wherein the first feedback signal is received from a another controller operable to control the load.
21. (Original) The adapter of claim 12, wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal superimposed on another analog signal, or an SMBus signal.

22. (Previously Presented) An information handling system comprising:

- a processor;
- a system bus;
- a memory coupled to the processor through the system bus; and
- a power supply system operable to provide power to the processor, the bus and the memory, the power supply system being connectable to an alternating current (AC) power source, wherein the power supply system includes:
  - a rectifier module operable to receive the AC input and generate a first direct current (DC) output;
  - a buck converter module operable to receive the first DC output and generate a second DC output responsive to a control signal;
  - an AC-DC adapter;
  - a controller module included in the AC-DC adapter and operable to receive a first feedback signal input indicative of a target voltage required by a load and a second feedback signal input indicative of the second DC output, the controller module adjusting the control signal, responsive to the first and second feedback signal inputs, to the buck converter module to maintain the second DC output to be within a predefined range of the target voltage; and
  - during a charging phase, a difference between the second DC output and the target voltage is always positive while providing a charge to the load, and the second DC output is reduced to a predefined value upon completion of providing the charge to the load.

23. (Canceled)